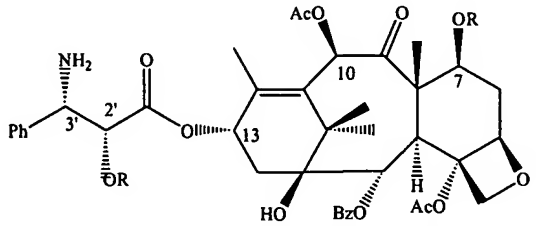
CLAIMS

What is claimed is:

1. A process for preparing a taxane comprising the steps of:

converting cephalomannine to a taxane intermediate having the structure:



wherein R is at each occurrence independently selected from hydrogen and a hydroxy-protecting group; and

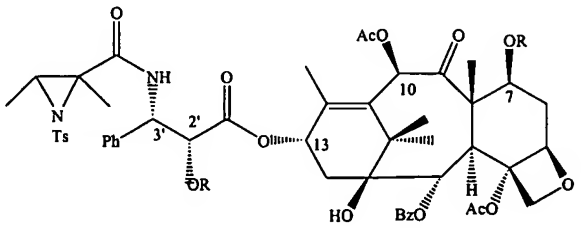
converting the taxane intermediate to paclitaxel or docetaxel.

2. The process of claim 1 wherein the taxane intermediate is converted to paclitaxel.

3. The process of claim 1 wherein the taxane intermediate is converted to docetaxel.

4. The process of claim 1 wherein the step of converting cephalomannine to the taxane intermediate further comprises the steps of:

converting cephalomannine to a cephalomannine aziridine analogue having the structure:

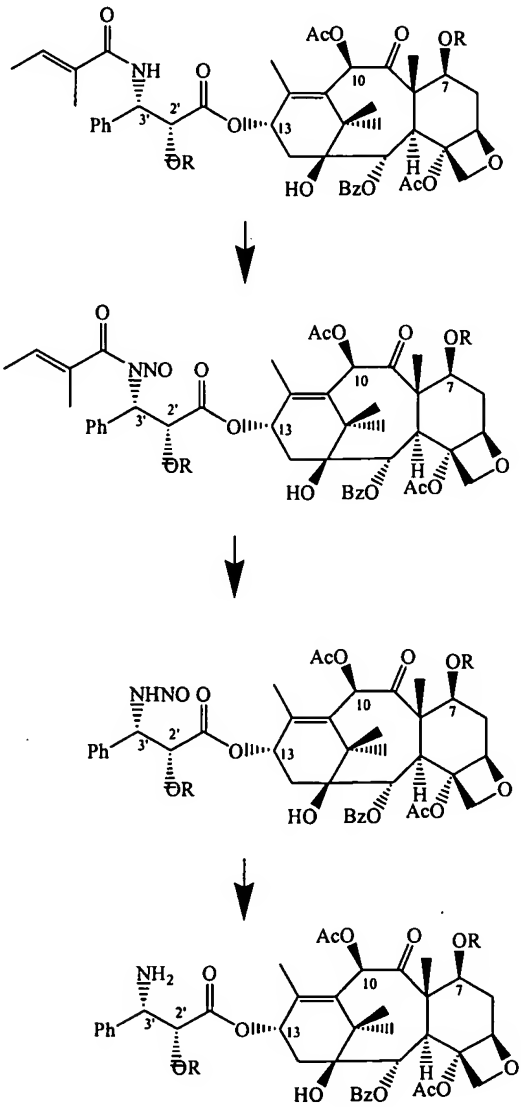


wherein R is at each occurrence independently selected from hydrogen and a hydroxy-protecting group; and

converting the cephalomannine aziridine analogue to the taxane intermediate.

5. The process of claim 1 wherein the step of converting cephalomannine to the taxane intermediate comprises reacting cephalomannine with formic acid.

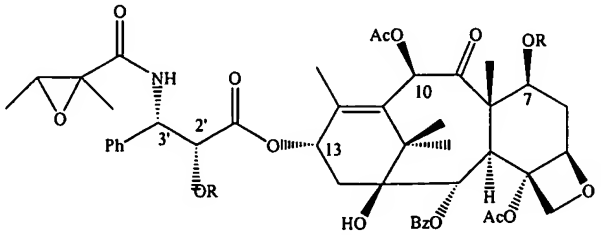
6. The process of claim 1 wherein the step of converting cephalomannine to the taxane intermediate further comprises the reaction sequence:



wherein R is at each occurrence independently selected from hydrogen and a hydroxy-protecting group.

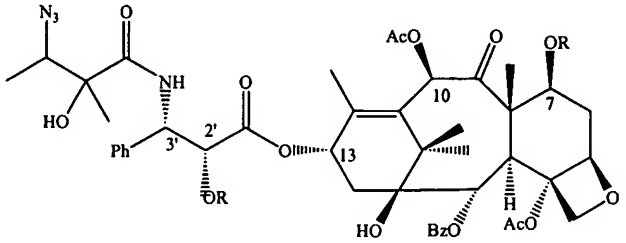
7. The process of claim 1 wherein the step of converting cephalomannine to the taxane intermediate further comprises the steps of:

converting cephalomannine to a cephalomannine epoxide analogue having the structure:



wherein R is at each occurrence independently selected from hydrogen and a hydroxy-protecting group;

converting the cephalomannine epoxide analogue to a cephalomannine azido alcohol analogue having the structure:

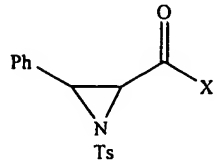


wherein R is at each occurrence independently selected from hydrogen and a hydroxy-protecting group; and

converting the cephalomannine azido alcohol analogue to the taxane intermediate.

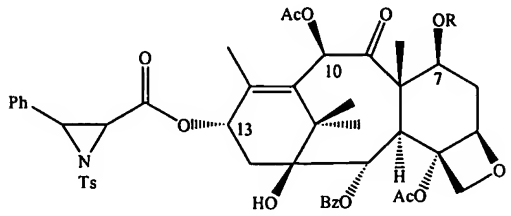
8. A process for preparing a taxane comprising the steps of:

converting cinnamoyl halide to a cinnamoyl halide aziridine intermediate having the structure:



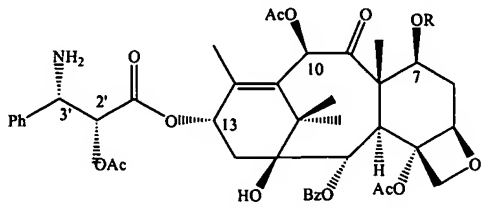
wherein X is halogen;

reacting the cinnamoyl halide aziridine intermediate with protected baccatin III to provide a protected baccatin III aziridine intermediate having the structure:



wherein R is selected from hydrogen and a hydroxy-protecting group;

converting the protected baccatin III aziridine intermediate to a taxane intermediate having the structure:



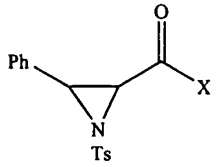
wherein R is selected from hydrogen and a hydroxy-protecting group; and

converting the taxane intermediate to paclitaxel or docetaxel.

9. The process of claim 8, wherein X is chloro.

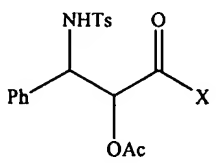
10. A process for preparing a taxane comprising the steps of:

converting cinnamoyl halide to a cinnamoyl halide aziridine intermediate having the structure:



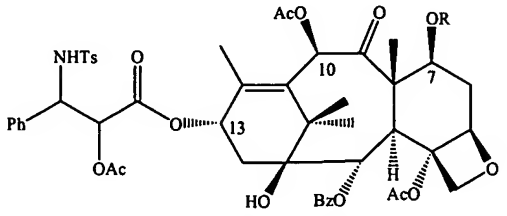
wherein X is halogen;

converting the cinnamoyl halide aziridine intermediate to an open chain cinnamoyl halide intermediate having the structure:



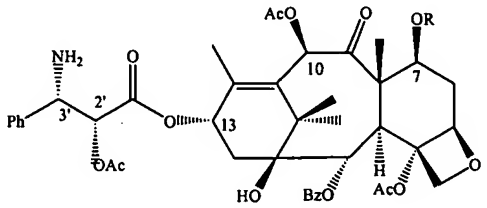
wherein X is halogen;

reacting the open chain cinnamoyl halide intermediate with protected baccatin III to provide a protected baccatin III intermediate having the structure:



wherein R is selected from hydrogen and a hydroxy-protecting group;

converting the protected baccatin III intermediate to a taxane intermediate having the structure:



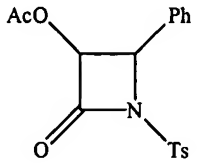
wherein R is selected from hydrogen and a hydroxy-protecting group; and

converting the taxane intermediate to paclitaxel or docetaxel.

11. The process of claim 10, wherein X is chloro.

12. The process of claim 10, wherein the step of reacting the open chain cinnamoyl halide intermediate with protected baccatin III further comprises the steps of:

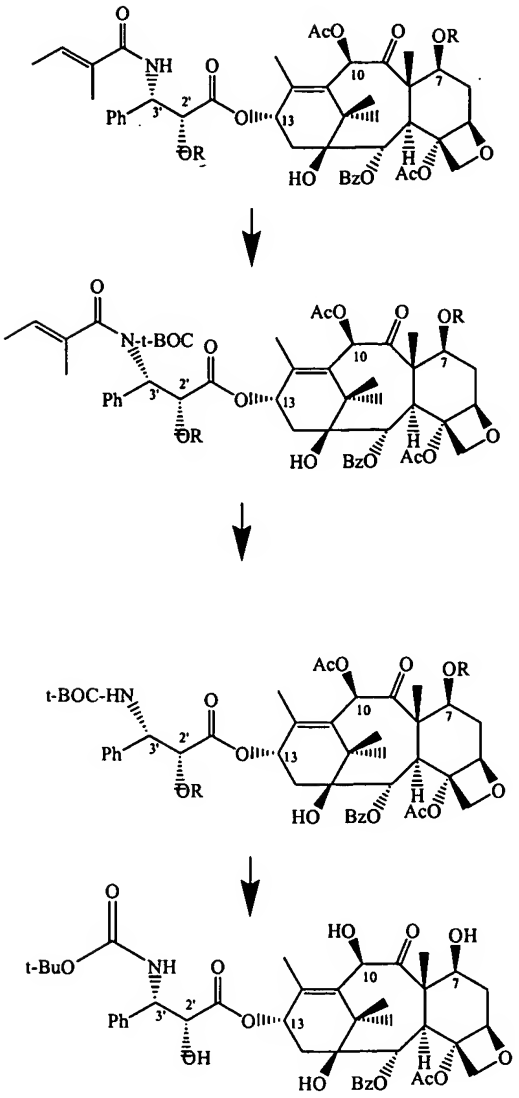
converting the open chain cinnamoyl halide intermediate to a β-lactam intermediate having the structure:



; and

reacting the β-lactam intermediate with protected baccatin III to provide the protected baccatin III intermediate.

13. A process for preparing docetaxel from cephalomannine comprising the reaction sequence:



wherein R is at each occurrence independently selected from hydrogen and a hydroxy-protecting group.